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10/565,716

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Mutsuaki Murakami

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EXAMINER

HA, NGUYEN T

ART UNIT

PAPER NUMBER

2831

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|--|--|
| Office Action Summary | Application No. 10/565,716 | Applicant(s) MURAKAMI ET AL. | |
| | Examiner NGUYEN T. HA | Art Unit 2831 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 23-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 23-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>12/09, 0210</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

The examiner acknowledges the applicant's submission of the amendment dated 3/17/2010. At this point, claims 23-26 and 29-31 have been amended, claim 32 has been added. Thus, claims 23-32 are pending in the instant application.

Response to Arguments

The applicant's argues that Schmidt et al. failed to disclose the combination of the conductive polymer and ionic liquid.

Examiner disagreed:

Schmidt et al. disclose a mixture of ionic liquids and conductive polymer electrolyte (paragraph 0014). It is inherent that the conductive polymer and ionic liquids as taught be Schmidt et al. would be capable of repairing a defect in the anodized.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

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under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 23-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiraishi et al. (US 6,989,289) in view of Schmidt (US 2004/0054041).

Regarding claim 23, Shiraishi et al. disclose a capacitor comprising:

- a positive electrode (1) of a valve metal,
- a dielectric (3) of an anodized film formed on the valve metal, and
- a negative electrode (5) including a composite material in contact with the anodized film,
- wherein the composite material includes a conductive polymer and an electrolyte solution (column 9, lines 11-21).

Shiraishi et al. lack an ionic liquid capable of repairing a defect in the anodized film.

Schmidt teaches an ionic liquid capable of repairing a defect in the anodized film (0013-0014).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the ionic liquid as taught by Schmidt. in to Shiraishi et al. to do so, it would provides an excellent electron conductivity and oxide film for the electrolytic capacitor.

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Regarding claim 24, Shiraishi et al. disclose the conductive polymer includes at least one selected from polypyrrole (column 22, lines 31-32).

Regarding claim 25, Shiraishi et al. disclose the negative electrode further includes a metallic part in contact with the composite material (column 19, lines 28-31).

Regarding claim 26, Shiraishi et al. disclose a method forming the capacitor comprising the steps of:

- making the mixture be in contact with the anodized film, and
- causing polymerization in the mixture to convert the at least one kind of monomer into the conductive polymer (see, claims 1-7).
- Shiraishi et al. lack a mixture including the ionic liquid and at least one kind of monomer,

Schmidt teaches a mixture including the ionic liquid and at least one kind of monomer (0013-0014).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the ionic liquid as taught by Schmidt. in to Shiraishi et al. to do so, it would provide an excellent electron conductivity and oxide film for the electrolytic capacitor.

Regarding claim 27, the teaching of Schmidt including the ionic liquid having been included in the mixture is remained in the composite material after the polymerization.

Regarding claim 28, the teaching of Schmidt including the steps of:

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- preparing a layer of the conductive polymer, and
- impregnating the layer of the conductive polymer with the ionic liquid
(0013-0014).

Regarding claim 29, Shiraishi et al. in view of Schmidt including a source material kit for forming the composite material to be used comprising, an ionic liquid, and at least one kind of monomer.

Regarding claim 30, Shiraishi et al. disclose the monomer is to be used for forming one selected from polypyrrole.

Regarding claim 31, Shiraishi et al. disclose the valve metal is one selected from aluminum, tantalum, niobium (column 6, lines 66-67).

Regarding claim 32, a method improving a withstand voltage of a capacitor that comprises;

- a positive electrode (1) of a valve metal;
- a dielectric (3) of an anodized film formed on the valve metal; and
- a negative electrode (5) comprising a composite material in contact with the anodized film;

Shiraishi et al. lack:

- wherein the composite material comprises a conductive polymer and an ionic liquid,
- repairing a defect of the anodized film formed on the valve metal material of the positive electrode with ionic liquid.

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- Schmidt teaches: the composite material comprises a conductive polymer and an ionic liquid,
- repairing a defect of the anodized film formed on the valve metal material of the positive electrode with ionic liquid (paragraph 0013-0014).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the ionic liquid as taught by Schmidt. in to Shiraishi et al. to do so, it would provides an excellent electron conductivity and oxide film for the electrolytic capacitor.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NGUYEN T. HA whose telephone number is (571)272-

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1974. The examiner can normally be reached on Monday-Friday from 8:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego F. Gutierrez can be reached on 571-272-2245. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Nguyen T Ha/
Primary Examiner, Art Unit 2831